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Abstract

A die attach package for connecting a die or chip of die-down orientation to a printed circuit board in a die-up orientation. The package includes a substrate with leads that may be traces terminating in vias or that may be the leads of a lead frame. The traces or the leads of the lead frame are modified such that they pass under the die when the die is attached. The traces or leads are routed under the die such that proper connections are established from the topside of the die to the appropriate mount locations of the printed circuit board. The die is attached to the substrate using a non-electrically-conductive material. This packaging enables a fabricator to make die of one orientation type, die down, and use that die in a die-up package, thereby saving on fabrication costs.

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